DEATH ON RAILROADS.

HOW LIFE IS JEOPARDIZED BY RAPID TRAVEL.

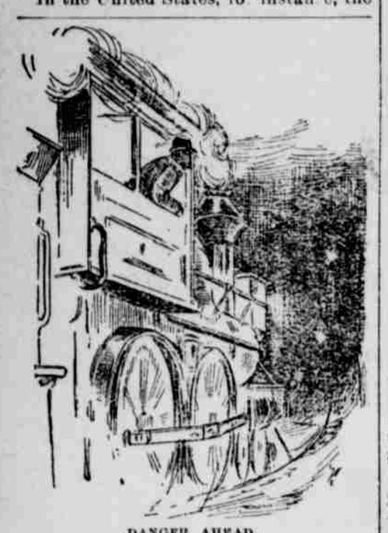
The Signal Code—What the Colored Flags and Lights Mean—An Engine that Wanted a Ride—Fatal Mistake of a Telegraph Operator.

Notable Collisions.

The many disastrous railroad accidents occurring of late, both in this country and in Europe, have naturally made the question of danger in railway travel a topic of general discussion.

But after all, when one stops to study the history and statistics of accidents of all kinds which overtake the traveling public, it would seem that the chances of death in this way are singularly remote. Indeed, it has been repeatedly asserted that there are fewer persons killed annually by adopting this method of travel than by any other, and when comparisons are made this would appear to be true.

In the United States, for instance, the



DANGER AHEAD.

number of passengers killed in railway accidents in the year 1889 was 207. The total passenger movement in the same year was equal to one person traveling 10,570,306,710 miles. Taking these figures upon which to base the chances of being killed, a person might have gone over 51,000,000 miles of country before meeting his death, an operation which would occupy no less a period than 194 years, traveling day and night at a speed of thirty miles an hour.

When the difference between life and

ENGINES WRECKED DURING THE GREAT WABASH STRIKE.

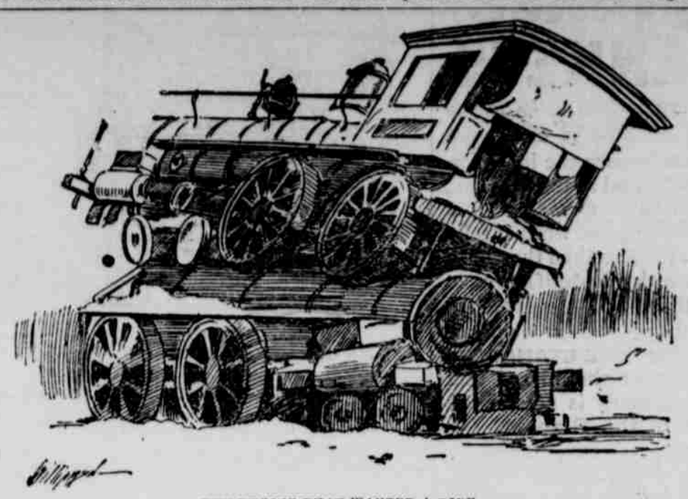
death can be made in a thousand and one ways, a misplaced switch, a warped rail, a misunderstood message, a faulty timepiece, or through any one of the almost countless unavoidable errors that may occur, the perfection to which railroading has been brought can only be regarded as marvelous.

When trains weighing 400 tons are seen moving at a rate of sixty miles an hour, with the people upon it confident of their safety, nor thinking of aught, perhaps, but the grand scenery at which they are permitted to look for so brief a space, the mechanical details and the disciplined intelligence which enable it to do so may be the better understood. If the writer who said of John Ericsson's locomotive in 1826, which weighed but two and a half tons and traveled at a maximum speed of thirty miles an hour for only a short distance, that it was the most wonderful exhibition of human daring and human skill the world had ever seen, could look to-day upon the achievements of railroading, he would doubtless think that he didn't know much of what he was talking after all.

But sixty miles an hour is not the highest rate of speed attained by trains of 400 tons. The extreme speed of seventy miles an hour, or 110 feet per second, has been reached more than once. This extraordinary energy has been computed to be nearly twice as great as a 2,000-pound shot fired from a 100-ton gun. It may be of interest in this connection to point out that the speed of a train may easily be determined by passengers curious enough to know at what rate they are traveling, by counting the number of rails over which they pass. By careful listening this can be detected, the number of miles per hour being almost exactly the same as the number of rails passed in twenty seconds.

With trains running at such remarkable speed it can be readily understood how necessary it is for every mind connected with a great railroad system to be centered upon the work allotted to it and every hand to be unfailing in the performance of its duties. The safety of a train entirely depends upon this condition of things, for there are but few devices in use on railroads that are solely safety appliances. Everything or nearly everything used has a mechanical or economic value, and if it perchance or intentionally promotes safety a part only of its duty is performed.

This is illustrated in the use of the brake. Its invention and application was for the sole purpose of stopping the train at stations for purely business purposes. But nevertheless it performs an important part in the prevention of accidents which threaten from countless causes. When the speed attained was less than that at which trains are run



THE ENGINE THAT WANTED A RIDE.

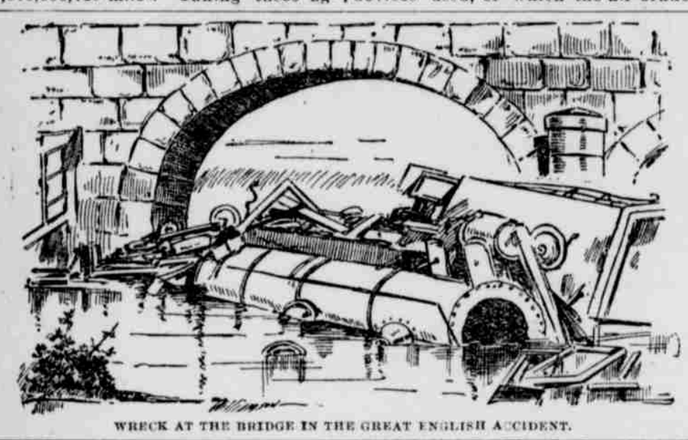
to day the old screw and foot brake were found sufficient for all practical purposes, but as the regular velocity of trains was increased it of course became necessary to adopt more quickly acting means to bring them to a standstill, hence the introduction of the automatic airbrake.

As showing the great advantage of the airbrake over handbrakes a series of experiments were made a few years ago with a train of fifty cars on a 3,000-mile run. The train was about one-third of a mile long, and from a speed of forty miles an hour it was repeatedly stopped in one-third of its own length. But the following comparison will give a better idea of the merits of the airbrake. The measurements were taken from the instant the brakes were applied, to the spot at which the train came to a standstill.

	No. of cars.	Miles per hour.	Feet.
Handbrakes	50	20	794
Airbrakes	50	20	166
Airbrakes	50	40	681
Airbrakes	20	20	99

The great value, therefore, of the airbrake in stopping a train before impending danger cannot be adequately gauged. But, apart from the mere mechanical devices used, of which the airbrake is by far the most important, the system of working and the discipline exercised in the successful operation of a road are an interesting study in itself. The cardinal principle to be observed in preventing accidents is never to allow a train to be ahead of time. The obvious reasons of this are manifold, and the imperative instructions given to employes of railroad companies in this connection show its importance. The engineer, despite the fact that the train is under the control of the conductor, is in no case considered blameless if unnecessary risk is run by leaving a station or passing any point ahead of the scheduled time.

In case of accident or stoppage upon the main track, it is the duty of the conductor to immediately station men at not less than a thousand yards—that is, 100 rails' length—distant, in both directions. These men carry a red flag by day and a red light by night, and two torpedoes must be fastened to the rail on the engineer's side of the track, one at 1,000 yards from the obstruction and the other fifty yards beyond it. These torpedoes are not removed, although the flagman is called in and proceeds with his train, but are left as a warning to



WRECK AT THE BRIDGE IN THE GREAT ENGLISH ACCIDENT.

the engineer of the first train that passes over them, whose duty it is to ascertain the object of their presence and proceed

LANTERN SIGNALING.

Up and down—Move ahead. Across the track—Stop. In circle—Go back. Swinging at arm's length—Train parted.

slowly until satisfied that all danger is passed. In cases of uncertainty every employe of a railroad company is instructed to take the safe side. The watchword is "Security." Let every man protect his own train and engine, and each section hand and station agent his track and switches, and accidents from carelessness will never occur.

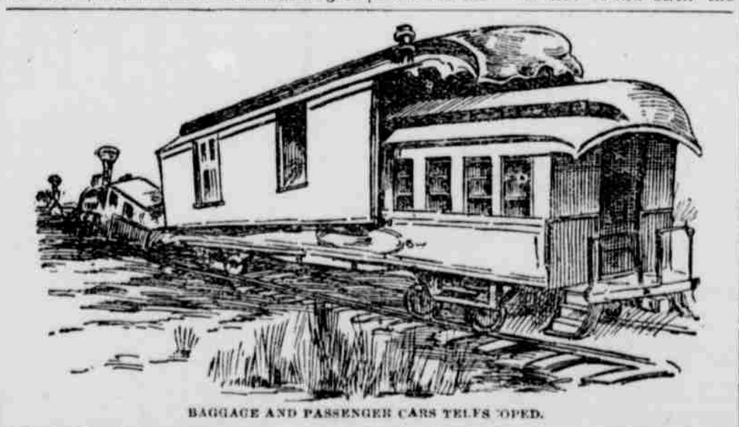
But not in train crews, section men and station agents are the responsibilities of safety in railroad traveling alone vested. At many stations where the agent himself does not manipulate the electric current which tells of the movement of trains elsewhere much depends upon the telegraph operator working for him. An error in a single word has more than once been the cause of terrible human slaughter.

Not many years ago an appalling accident happened on a single track branch line of an English railroad, which is, perhaps, unsurpassed in the annals of railroading for its terrible results. It happened in this way: There are two stations about five miles apart: the one is at the junction of the branch with the main line and the other about half way to the terminus of the road on the east coast. Trains were scheduled to leave each end of the road at the same hour, to meet at the half-way station, where provision was made for them with a double track. A mishap occurred at the junction on the occasion referred to, and the departure of the east-bound train was consequently delayed. When the train from the coast reached the customary meeting point the east-bound train was not in sight and the operator telegraphed to the junction for instructions. He was informed that the train had been unavoidably delayed. Then he asked whether the west bound should proceed or await the arrival of the overdue train.

The answer he got was, "Just come on," and he at once started the train on its way.

What the operator had intended to say was, "Just gone on," referring to the east bound train. But it was too late. He discovered his mistake immediately and telegraphed for the station agent at the half way depot to hold his train. The reply was that it had just pulled out. About two miles from the junction there is a sharp curve in the road, and immediately beyond this a bridge, which crosses a deep river. The trains met on this bridge with scarcely a moment's warning. There was a terrific crash, and the two trains, a mass of twisted iron and splinters, toppled over into the water. There were some 300 passengers on board the two trains, but not one was saved. The operator knew what the inevitable result of his error would be while yet the two trains with their human freight, unconscious of the fate which awaited them, were rushing on to their destruction. The effect of this upon his mind was so great that ere the accident had happened he rushed from his office and was not found until the following day, and then with his mind permanently deranged. This calamity was due to the simple error of one word, and goes to show how great consequences may follow little acts of negligence or inattention.

RAILROAD TORPEDO FOR WARNING TRAINS OF TROUBLE AHEAD.



BAGGAGE AND PASSENGER CARS TELESCOPED.

Another collision worthy of mention took place on the Batavia branch of the New York Central and Hudson River Road. At the time it occurred there had been some very heavy snowstorms, and the line between Batavia and Canandaigua was blocked in several places. An engine came up from Canandaigua, got very near Batavia and was in a drift. The engine was pushing a snow-plow, constructed something like an inclined apron, extending fifteen feet or thereabout from the front end of the engine, and was attached to a work train, with men to go east to help open the road. It got a short distance from Batavia station and was working through the drift when a train from the opposite direction met it and the engine ran up on the snow plow. The plow being very strong sustained the weight, and the engine continued to move forward until it mounted fairly on the top of the other. This accident also occurred through the agent mistaking his orders over the wire from the next station.

The telescoping of coaches which invariably follows serious collisions between passenger trains, may also be classed as one of the remarkable results in railroad accidents. Often a passenger coach will become almost completely incased by the one next to it, while the remainder of the train is comparatively but little injured.

The derailments of trains are occasioned by a variety of causes, among which is the open switch, the spreading or the warping of the rails and by obstructions that may be accidentally or purposely placed upon the rails. Of these the former is by far the commonest cause, but as an open switch is invariably indicated by a signal of some kind, such as the arm of a semaphore by day and a red light by night, the casualty is frequently traced to the negligence of the engineer.

Next to the air brakes in preventing accidents a proper understanding and prompt service of signaling is considered as the most important. Signaling by torpedoes, already referred to, is both effectual and simple in many cases, but it is with the manipulation of colored flags and lights that trainmen must make themselves familiar in order to secure the proper protection of life and property. The following code of signals will not be without interest:

A green flag displayed at a station by day or a green light at night tells the engineer that orders are awaiting him and he must bring his train to a stop.

Special trains carry two green flags by day or two green lights by night on the front of the engine.

A red flag or red light or the explosion of a torpedo denotes danger ahead. If, however, such a signal is placed just outside the rails it denotes that the track is out of order and speed must be reduced to six miles an hour, but if placed within the rails it shows that the track is impassable and the train must be brought to a stop.

Two red signals on an engine show that another train is following and has the same rights as the train carrying the signal, but if the signals be white instead of red it shows that the train following will keep ten minutes behind all regular passenger or freight trains.

One sound of the locomotive whistle tells the brakemen to apply the brakes; two sounds to let them go again; three sounds is the signal to back the train; four sounds call in the flagman who has been sent out to warn approaching trains; and five sounds is a warning to men on top of freight cars that the train is approaching a covered bridge or tunnel.

When a train is approaching a road-crossing the engines gives one long and two short sounds, while a succession of short sounds of the whistle is a signal of danger.

A light swung over the head is a signal to go ahead, when swung across or at right angles with the track is a signal to back up, and when moved up and down is a signal to stop.

With all these details to bear in mind, with the many other duties devolving upon the men in whose hands the safety of trains and human life is placed, it is indeed a marvel that accidents are not of more frequent occurrence and the sacrifice of life greater.

AGED INDIAN CHIEFS.

Notable Figures Among Tribes of Oregon that Will Soon Pass Away.

It is interesting to talk with civilized Indians and learn from them what they may know of the present and past conditions of their race, says the Salem Statesman. Speaking of the prevalence of consumption among the Indians on the Klamath agency calls to mind that a few more years will find these Indians nearly all in their graves.

Henry Jackson, of Klamath, assigned a very plausible reason for their decline. He says their food is now different from that of the wild Indian and their habits of life are very changed. Formerly they roamed at will, clad scantily with rough skins or naked, just as fancy suited them. Now they are clothed and housed and often removed to different climes and the changes of temperature at once make themselves felt and attack the lungs. Mr. Jackson talked freely of the old Indian chiefs.

"Sconchin," the last chief of the Modocs and one of the leaders in the Modoc war, is still living. He is weak and stone blind and must be considerably over a hundred years of age. "Choctaw," the last commander of the Snakes, surrendered his life and passed on to the happy hunting grounds only three weeks ago. He also was blind and was a hundred or more years of age.

"Allen David," who used to be a great chief among the Klamaths, is still living, although at an advanced age. The light has gone out of his eyes and he has to depend on his people for food and care. The tribe relations are all broken up, and from Mr. Jackson's words it is seen that very soon the last of the original chiefs will have passed to that bourne whence no traveler returns. Although not disappearing with the buffalo, as it was years ago said they would do, the American Indian will not be far behind the beast of the prairie in passing from view.

Ptolemaic Africa.

If Ptolemy's map of northeastern Africa is to be relied upon—which has been doubted—modern travelers in the eastern equatorial regions have merely rediscovered what was in some way made known to the Alexandria geographer two thousand years ago. To test the accuracy of Ptolemy, Dr. H. Schlichter has constructed two maps—one from Ptolemic data only, and the other showing the latest knowledge. A careful comparison, with allowance for early defects, shows many striking coincidences. Most of the places on the east coast marked by Ptolemy are readily identified with places well known to-day; while in the interior, Ptolemy's Eastern Nile lake proves to be the Victoria Nyanza, the Western Nile lake to be Lake Albert or Lake Albert Edward, the eastern end of the Mountains of the Moon coincides with a point a little south of Mount Kenia and the western end with Ruwenzori, and the confluence of the two rivers forming the Nile agrees with the place where the Somerset Nile flows into Lake Albert.

OUR BUDGET OF FUN.

HUMOROUS SAYINGS AND DOINGS HERE AND THERE.

Jokes and Jokelets that Are Supposed to Have Been Recently Born—Sayings and Doings that Are Odd, Curious and Laughable.

Perils of New Fashions.

Little Son—Pa, you'd better not disturb ma.

Pa—Why not.

"She's in an awful temper."

"What about?"

"I don't know."

"Where is your ma?"

"Up stairs in the room."

"How does she act?"

"Oh, awful. She's ravin' 'round, turning over chairs, and moving furniture, and banging things about awful, and she keeps saying, 'Beshrew it,' 'Consarn it,' and 'Electrocute it' in the awfullest maddest voice I ever heard, only it ain't loud."

"Poor dear! She must have lost her collar button again."—Street & Smith's Good News.

Time for Repentance.

Wife—John, dear, I wish particularly that you would come with me to church this morning.

Husband—Why this solicitude regarding my spiritual welfare?

Wife (gently)—Because I overheard you putting up the hall stove last evening.—Pittsburg Bulletin.

Jogging His Memory.

Miss De Peyster—I have been trying to find out where your daughter got her new gown. Have you any idea?

Col. Bilderwick (grimly)—I ought to know. The woman she bought it from has been around to my office every day for a month.—Cloak Review.

Forced to It.

Melton—I see that Manger has broken off his engagement.

Dobbs—What was the difficulty?

Melton—He found out that he couldn't get married without getting a new dress suit.—Clothier and Furnisher.

Must Be in the Swim.

Mrs. Billsdoo—I notice rococo is very fashionable at the present time.

Mrs. Bullion—Do tell! I must have Signor Spaghetti (that's my chef, you know) serve some up.—Jeweler's Circular.

Couldn't Stand It.

"What has become of Robinson?"

"He has gone out to Salt Lake City to live. He spent two months of last summer at a summer resort, and when he came back home it was too tame for him."—Puck.

Reciprocity.

Cohen (tragically)—"Aha! und so I haf been nursing a snake in mine bosom."

Lowenstein—"How vos dot?"

Cohen—"Here I haf paid your carfare at leasd four dimes, und now you refuse to lend me a fife-tollar bill."—Judge.

A Liberal Education.

Civil Service Examiner—You have passed a splendid examination, Mr. Complex; might I ask how you prepared yourself?

Mr. Complex—I make it a point to look up and answer the questions asked me by my ten-year-old boy.—Truth.

A Broadening Profession.

"So, you're an actor?" said the man in the counting room to a seedy applicant for pecuniary assistance.

"Yes, sir; I'm an actor."

"Nice business. I'd like to be an actor myself," continued the man, with interest.

"Yes; most people think that way until they try it."

"Besides the excitement of applause, the traveling you must do broadens the mind so."

"I don't object to that," said the actor softly. "What I do object to is the way it broadens the feet." And he looked down at his poor, weary, worn shoes and sighed deeply.—Detroit Free Press.

Encouraging.

Jack—I'm afraid your father doesn't like me very well, Marie.

Marie—Oh, but Jack, he doesn't dislike you, I am sure. He said at dinner only yesterday that there wasn't enough to you to inspire any special feeling, either of approval or dislike."—Somerville Journal.

A STATISTICIAN says "eight hundred thousand official prayers are annually offered for the Prince of Wales." If prayer of others will save a man the Prince might consider himself safe. If the Prince would take a part in the exercises his chances would doubtless increase.

IF you have nothing else to be thankful for, be thankful that you can't always read your best friend's thoughts.

COULD the man who predicts catastrophes in the money market be called a financier?

WE are all in it, but with some of us it is the soup

THAT RUSSIAN PETITION.

Half a million American citizens have petitioned the Czar to infuse a little more of the milk of human kindness into his treatment of his people. There was no difficulty in getting people to sign them. Sidney Smith once defined English charity to be as follows: "A seeing B in distress, feels a strong impulse to make C go to his assistance." It was easy, therefore, to get the signers; now the question is, who will deliver it. It is not quite as easy to get audience with the head of the Holy Greek Church and the Czar of all the Russias as it is to walk up to the President of these United States and slap him on the back. Still if the bearers of the petition would begin by saying that, in view of the awful destitution that now prevails throughout the empire and the prevalence of "the grippe," it would be well for the government to send a supply of REID'S GERMAN COUGH AND KIDNEY CURE to the provinces, this might secure the committee a respectful hearing, for it would show that they were actuated by a sincere desire to help that suffering people. For sale by all druggists.

SYLVAN REMEDY CO., Peoria, Ill.